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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/500,000	03/24/2005	Ivo Agner	588.1030	5858
23280 7590 07/25/2007 DAVIDSON, DAVIDSON & KAPPEL, LLC 485 SEVENTH AVENUE, 14TH FLOOR NEW YORK, NY 10018			EXAMINER POPOVIC, BOJAN	
			ART UNIT 3709	PAPER NUMBER
			MAIL DATE 07/25/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/500,000

Applicant(s)

AGNER ET AL.

Examiner

Bojan Popovic

Art Unit

3709

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 24 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 16-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 16-19, 22, 23 and 31-34 is/are rejected.
- 7) ☒ Claim(s) 20, 21 and 24-30 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 June 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 6/23/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Objections*

1. Claim 25 is objected to because of the following informalities: In line 2 of claim 25, the word "sdame" should be changed to "same".

Claim 34 is objected to because of the following informalities: In line 4 of claim 34, the word "roller" should be changed to "rotor". Appropriate correction is required.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 16-17 and 31-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suelter (U.S. Patent 5,876,194) in view of Draskovits et al. (U.S. Patent 5,466,135).

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In regards to claims 16-17 and 31-33, Suelter teaches a fixed displacement vane pump comprising a cam ring (30), a rotor (18), vanes radially displaceably mounted in the rotor (20; Col 2 Lines 62-64), two side plates for sealing the rotor (22 and 26, Col 2 Lines 29-32), a housing and a cover for housing (14 and 16, respectively), a shaft driving the rotor and supported in the housing (44), and a first pin positioning the cam ring with respect to the side plate, the first pin not passing through the side plate (32). Figure 1 of Suelter also shows that the shaft (44) is also supported in the pump cover (16) by a bearing (47). The cam ring, rotor, vanes and the side plates define a rotary cell group that is fixed to both the housing and the cover (12; Col 2 Lines 39-42). Additionally, Suelter illustrates that the housing (14) has a pot shape.

Regarding independent claim 34, Suelter teaches a pump comprising a cam ring with a first hole (12), a rotor (18), vanes or rollers radially displaceably mounted in the rotor (20; Col 2 Lines 62-64), a side plate for sealing the rotor, the side plate having a second hole extending through the side plate (26). It should be noted that the through hole associated with a fastener (36) on the side plate 26 is construed to be the second hole. This is different from the interpretation of claims dependent from claim 16. In that instance, the second hole is interpreted to be the blind hole on the side plate 26 that is associated with pin 32. The vane pump according to Suelter further comprises a housing (14), a cover for housing (16), a shaft driving the rotor and supported in the housing (44), a first pin located in the first hole and the second hole (32), and a second pin located in the second hole (36). Suelter does not explicitly disclose whether the cam ring is a double-stroke type.

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Attention is now directed to the Draskovits et al. reference, which also teaches a rotary vane-cell pump. It is understood that a double-stroke cam ring constitutes two crescent shaped passages through which the vanes run. Figures 1 and 2 of the Draskovits et al. invention show this type of vane pump configuration (Col 2 Line 42). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to modify the cam ring of the Suelter pump to incorporate the double-stroke design taught by Draskovits et al. Such pumps are well known in the art, and modifying the Suelter pump to include two pumping chambers instead of one would not change the intended scope of the invention. One would have been motivated to make such a modification in order to improve the pumping output of the Suelter pump.

Claims 18-19 and 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suelter (U.S. Patent 5,876,194) and Draskovits et al. (U.S. Patent 5,466,135) in further view of Dworak et al. (U.S. Patent 4,443,168).

In regards to claims 18 and 19, the combination of Suelter and Draskovits et al. references teaches the present invention according to claim 16. Although Suelter and Draskovits et al. disclose that there may be a plurality of positioning pins, the two references do not teach that a pump further comprises a second pin positioning the side plate with respect to the housing or the cover, the second pin not passing through the side plate and the second pin not contacting the cam ring.

Attention is now directed to the Dworak et al. reference, which teaches a centering arrangement for gear machines. Figure 1 of Dworak et al. shows a hydraulic machine comprising a housing (10), internal chamber (11) and two side plates (12 and

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13) mounted on the housing to close the open ends of the internal chamber (Col 3 Lines 48-50). Although the internal chamber is shown to be a gear pump, one of ordinary skill in the art would appreciate that it can be changed to a vane pump without departing from the intended scope of the reference. Dworak et al. further disclose centering and positional fixing means by providing a plurality of blind bores (27, 28, and 29) that are associated with a plurality of pins (30) in the respective bores (Col 4 Lines 5-12). From figure 1 of Dworak et al., it can be seen that the pin 30 positions the side plate 13 with respect to the bearing member 25. The pin does not pass through the side plate nor does it contact the cam ring which can be represented by element 11. Although Suelter only discloses two pins, one of ordinary skill in the art would appreciate that the number of pins is not as important as their purpose. Two pins will accomplish the same purpose as three or more pins; the only difference being that two pins will have to sustain higher shear stress compared to three or more pins of same diameter.

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to modify the pin arrangement of the invention taught by Suelter and Draskovits et al. references with the pin arrangement taught by Dworak et al. In both inventions, the pins serve the purpose of centering and fixing the pump members in relation to one another. In addition to the two pins shown by Suelter, an additional third pin may be added without changing the scope of the invention. Using a pin arrangement taught by Dworak et al. may be a more cost efficient alternative compared to the pin arrangement used by Suelter, since the cam cover would not have to accommodate the pins, thus being cheaper to manufacture.

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Regarding claims 22 and 23, the combination of Suelter, Draskovits et al. and Dworak et al. references teaches the present invention according to independent claim 1 and dependent claim 18. From figure 1 of Suelter, it is evident that the two pins (32) each protrude approximately into the middle of a thickness of a side plate. One of ordinary skill in the art would appreciate that a third pin, taught by Dworak et al., may be added to the Suelter invention without changing its intended scope. One would have been motivated to add a third pin of the same diameter to the Suelter pump in order to reduce the shear stress imparted on the other two pins.

#### ***Allowable Subject Matter***

3. Claims 20-21 and 24-30 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

#### ***Conclusion***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Nied-Menninger et al. (U.S. Patent 6,641,380) and Staton et al. (U.S. Patent 6,358,020) teach vane-cell type pumps comprising centering pins to accurately position the cam ring and side plates with respect to each other.

Rich (U.S. Patent 3,270,680) and Jakoboice et al. (U.S. Patent 3,554,678) teach a gear pump with centering pins to accurately position the gear ring and side plates with respect to each other. Any inquiry concerning this communication or earlier

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communications from the examiner should be directed to Bojan Popovic whose telephone number is (571) 270-1889. The examiner can normally be reached on Mon-Fri, 8:00AM-5:00PM EST, Alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Jackson can be reached on (571) 272-4697. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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6/26/07

GARY JACKSON  
SUPERVISORY PATENT EXAMINER

A handwritten signature in black ink, appearing to read "Gary Jackson", with a long horizontal flourish extending to the right.